



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,177	04/19/2006	Yoshinari Higaki	0553-0494	7224
26568 7590 09/12/2008				
COOK ALEX LTD SUITE 2850 200 WEST ADAMS STREET CHICAGO, IL 60606				
EXAMINER				
WONG, TINA MEI SENG				
ART UNIT		PAPER NUMBER		
2874				
MAIL DATE		DELIVERY MODE		
09/12/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/576,177

**Applicant(s)**

HIGAKI ET AL.

**Examiner**

Tina M. Wong

**Art Unit**

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/ICE)  
Paper No(s)/Mail Date 4/19/2006 & 4/2/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted by the International Bureau under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

Claims 8-14 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from another multiple dependant claim. See MPEP § 608.01(n). Accordingly, the claims 8-14 have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,071,037 to Suzawa et al.**

In regards to claim 1, Suzawa et al teaches a semiconductor device comprising a transparent conductive film (Column 11) and a plurality of thin film transistors (Figure 15) having a semiconductor thin film (1001 & 1002b) over a substrate having an insulating surface (1004) and an electrode or a wiring formed by stacking a first conductive layer (1002a) in contact with the semiconductor thin film and a second conductive layer (1003) on the first conductive layer wherein the first conductive layer has a larger width than the second conductive layer. But Suzawa et al fails to explicitly state for the transparent conductive film to be in

contact with a part of the first conductive film extending from an end portion of the second conductive layer. However, Suzawa et al teaches the transparent conductive film to be formed over the entire surface. Although Suzawa et al does not explicitly teach the two films to be touching, it can be reasonably inferred from the embodiments disclosed by Suzawa et al, the two films are minimally in indirect optical/electrical contact with each other since each of the layers of the device work together to function. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the two films to be at least indirectly in optical/electrical contact with each other.

In regards to claim 2, Suzawa et al teaches a semiconductor device comprising a transparent conductive film (Column 11) and a plurality of thin film transistors (Figure 15) having a semiconductor thin film (1001 & 1002b) over a substrate having an insulating surface (1004) and an electrode or a wiring formed by stacking a first conductive layer (1002a) in contact with the semiconductor thin film and a second conductive layer (1003) on the first conductive layer wherein the first conductive layer has a portion projected from the end portion (bottom endface) of the second conductive layer. But Suzawa et al fails to explicitly state for the transparent conductive film to be in contact with the portion of the first conductive film projected from the end portion of the second conductive layer. However, Suzawa et al teaches the transparent conductive film to be formed over the entire surface. Although Suzawa et al does not explicitly teach the two films to be touching, it can be reasonably inferred from the embodiments disclosed by Suzawa et al, the two films are minimally in indirect optical/electrical contact with each other since each of the layers of the device work together to function. Therefore, it would

have been obvious at the time the invention was made to a person having ordinary skill in the art for the two films to be at least indirectly in optical/electrical contact with each other.

In regards to claims 3-5, Suzawa et al teaches a semiconductor device comprising a transparent conductive film (Column 11) and a plurality of thin film transistors (Figure 15) having a semiconductor thin film (1001 & 1002b) over a substrate having an insulating surface (1004) and an electrode or a wiring formed by stacking a first conductive layer (1002a) in contact with the semiconductor thin film and a second conductive layer (1003) on the first conductive layer. But Suzawa et al fails to explicitly state for the transparent conductive film to be in contact with the side surface portion of the first conductive layer. However, Suzawa et al teaches the transparent conductive film to be formed over the entire surface. Although Suzawa et al does not explicitly teach the two films to be touching, it can be reasonably inferred from the embodiments disclosed by Suzawa et al, the two films are minimally in indirect optical/electrical contact with each other since each of the layers of the device work together to function. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the two films to be at least indirectly in optical/electrical contact with each other. Suzawa et al further teaches the side surface portion of the first and second conductive layers to have the same tapered angle. But Suzawa et al fails to explicitly teach for the side surface portion of the first conductive layer to have a smaller or larger tapered angle than a side surface portion of the second conductive layer. However, Applicant claims a taper of the same, smaller and larger angle between the two conductive layers. Since Applicant claims multiple tapered angle possibilities and states for each of the tapered angles to be capable of performing with a reasonably equivalently in the semiconductor device, this limitation is a non-

critical aspect of the invention. Furthermore, Suzawa et al shows the same tapered angle between the two layers. Therefore, since Applicant claims the three tapered angles to function equivalently, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have chosen any one of the three tapered angles.

In regards to claim 6, Suzawa et al teaches a semiconductor device comprising a transparent conductive film (Column 11) and a plurality of thin film transistors (Figure 15) having a semiconductor thin film (1001 & 1002b) over a substrate having an insulating surface (1004) and an electrode or a wiring formed by stacking a first conductive layer (1002a) in contact with the semiconductor thin film and a second conductive layer (1003) on the first conductive layer and a flattening insulating film over a part of the electrode or a part of the wiring (gate, drain or source insulating film); wherein the transparent conductive film is provided over the flattening insulating film, wherein the first conductive layer has a portion projected from an end portion (bottom endface) of the second conductive layer and wherein an end portion of the electrode or an end portion of the wiring is located within the contact hole. But Suzawa et al fails to explicitly state for the electrode or the wiring to be in direct contact with the transparent conductive film through a contact hole. However, it can be reasonably inferred from the embodiments disclosed by Suzawa et al, the electrode or wiring are minimally in indirect optical/electrical contact with each other since each of the components of the device work together to function. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the components to be at least indirectly in optical/electrical contact with each other.

In regards to claim 7, Suzawa et al teaches the first conductive layer to be formed with titanium, molybdenum, alloy containing titanium or ally containing molybdenum.

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The documents submitted by applicant in the Information Disclosure Statements have been considered and made of record. Note attached copy of forms PTO-1449.

***Inventorship***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571)272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tina M Wong/  
Primary Examiner, Art Unit 2874